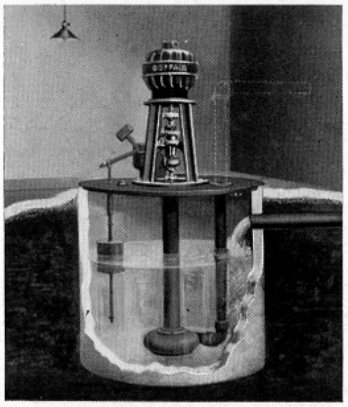
BUFFALO

Sump Pumps



Bulletin No. 959

Buffalo Steam Pump Co.
Buffalo, N. Y.

New York	Cleveland	New Orleans
Boston	Detroit	Atlanta
Philadelphia	Chicago	Minneapolis
Pittsburgh	St. Louis	Denver
Charlotte, N. C.	Los Angeles	Cincinnati

Canadian Blower & Forge Co., Ltd.
Kitchener, Ont., Canada

Toronto Montreal Calgary Vancouver St. John.

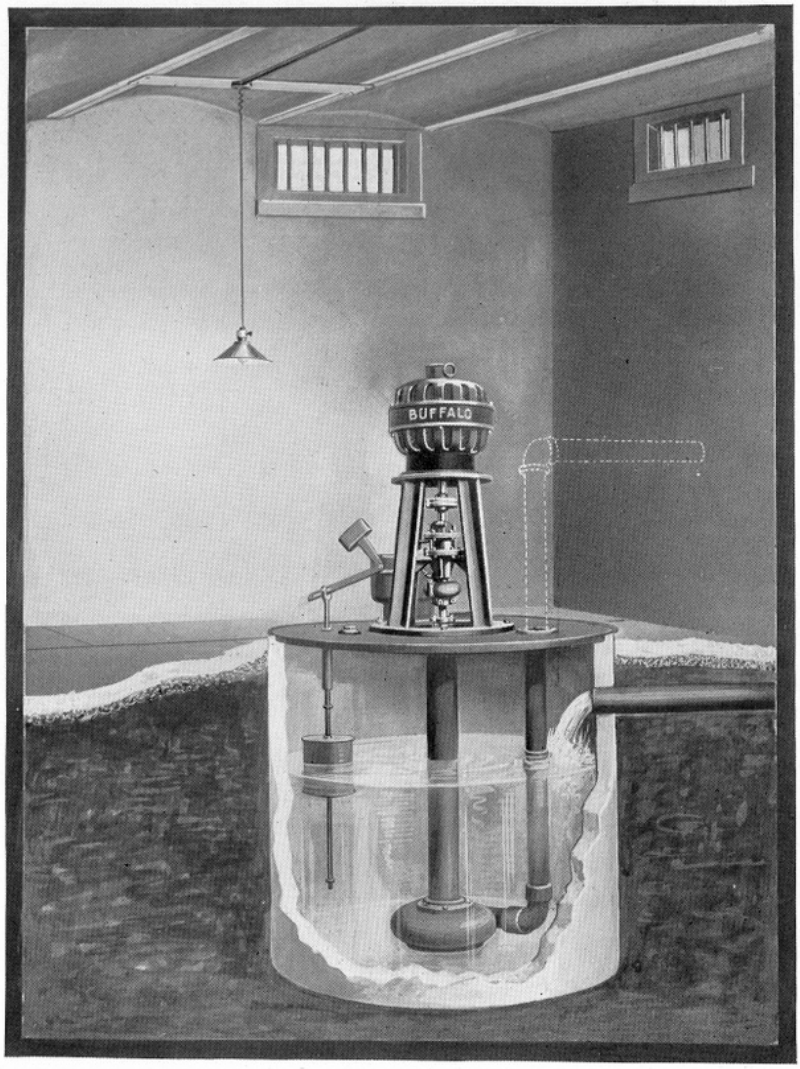


Fig. 1105

Typical Installation View of a Buffalo Automatic Electric Driven Sump Pump

Buffalo Automatic Standard Sump Pumps

The success which has attended the operation of the hundreds of pumps of this type illustrated herein is the very best recommendation the Buffalo Automatic Sump Pump could have.

To point out the difference between our pump and some of the cheaper but less successful outfits, intended to perform similar work, we call attention to the following:

1. A self-contained outfit which on arrival needs only to be uncrated, connections to the automatic starter and motor made, and the unit is ready for operation.
2. Shaft is entirely enclosed and **really is** protected from action of sump water and possibility of fouling from waste or stringy matter flowing into sump pit.
3. Ball-bearing thrust is provided to carry weight of moving parts, lower ball race resting on spherical seat to permit it to adjust to conditions of alignment.
4. Oil—**not grease**—is used to lubricate this thrust. For intermittent operation at high speed grease is thrown away from the bearing surfaces by the rapid rotation and, owing to the fact that the pump operates for only a few minutes at a time to empty the sump, the grease does not get warmed up and become fluid enough to flow to the bearing surfaces.
5. Oil lubricant is supplied to the ball-bearing thrust automatically in a continuous flood while pump is in operation.
6. Stuffing-box and gland around shaft at cover plate prevent any steam, gases or foul odors rising into room, if edge of cover plate be caulked tight.
7. All parts of outfit easily accessible.

Buffalo Automatic Standard Duplex Sump Pumps

Where duplicate outfits are wanted on a single cover plate, or two different sizes on a single cover plate, we can offer Fig. 1099. These are used mostly where chances of shut down, due to repairs or other causes, would be very serious. Pumps can be furnished to operate independently of each other, or together.

Construction of each outfit is the same as in the standard Sump Pump.

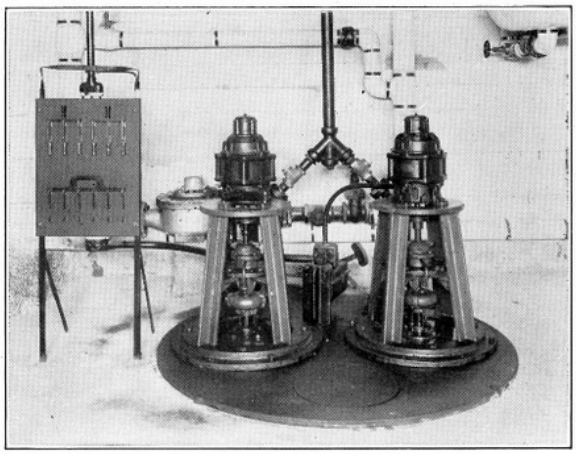


Fig. 1099

Installation View of a Buffalo Duplex Sump Pump

Buffalo Automatic Standard Sump Pumps

Pump: Buffalo Vertical Single Suction. Class "O" for 3 in. and smaller; Class "B" for 4 in. Good for 100 ft. pressure.

Casing and Suction Side Plate: Cast iron, machined to gauge drilled to template. Close clearances with impeller preventing leakage.

Impeller: Cast iron, single suction, open type. Fig. 1202.

Shaft: Steel. Cannot be brass covered. Monel metal can be furnished on special order. Enclosed in pipe which extends from pump to cover plate.

Thrust Bearing: Vertical ball bearing type, automatically lubricated. Figs. 1031, 1032 and 1008.

Guide Bearing: Not required with standard outfits. Where pit is very deep and shaft required support between pump and cover plate, a Buffalo guide bearing is furnished inside the pipe surrounding the shaft. This bearing is lubricated from a sight feed oil cup.

Coupling: Flexible type.

Sump Pit: Not furnished.

Float: Copper ball float.

Stuffing Box and Gland: In cover plate, around shaft, to prevent any steam, gases, or odors escaping into room.

Discharge Pipe: Furnished up to cover plate.

Cover Plate: Cast iron. See page 7.

Motor Tripod: Cast iron, about 24 in. high.
Thrust bearing supported by motor tripod.

Float Switch: Automatic. To suit electric current. Mounted on cover plate.

Finish: All outfits painted, filled and rubbed down. Bright parts exposed to weather protected by slushing compound.

Code Word. Regular Fitted, Without any Electrical Equipment, or Pit.*	Figure Number	Size of Pump, Inches	Size of Discharge, Inches	Capacity, Gallons Per Minute	Total Head, Feet	Speed Limits, Revolutions Per Minute		Size of Motor, Horse Power
						Minimum	Maximum	
MRTAL	1105	1½	1½	60	10	850	1450	1
MRTEM	1105	1½	1½	60	15	980	1800	1½
MRTIN	1105	1½	1½	60	20	1120	1800	1½
MRTIW	1105	1½	1½	60	25	1250	1800	1½
MRTIX	1105	1½	1½	60	30	1400	1800	2
MRTOP	1105	2	2	125	10	750	1200	1½
MRTOR	1105	2	2	125	15	900	1450	2
MRTYS	1105	2	2	125	20	1000	1650	3
MRTZB	1105	2	2	125	25	1120	1800	3
MRTZN	1105	2	2	125	30	1200	1800	3
MRVAM	1105	2½	2½	200	10	650	1120	2
MRVEN	1105	2½	2½	200	15	800	1300	3
MRVIP	1105	2½	2½	200	20	900	1500	5
MRVIT	1105	2½	2½	200	25	1000	1750	5
MRVIZ	1105	2½	2½	200	30	1100	1800	7½
MRVOR	1105	3	3	275	10	550	1120	3
MRVUS	1105	3	3	275	15	600	1300	3
MRVYT	1105	3	3	275	20	700	1500	5
MRVZA	1105	3	3	275	25	750	1750	5
MRVZL	1105	3	3	275	30	800	1800	7½
MRWAN	1105	4	4	500	10	1000	1120	5
MRWEP	1105	4	4	500	15	1050	1250	5
MRWIR	1105	4	4	500	20	1120	1450	7½
MRWIS	1105	4	4	500	25	1250	1600	10
MRWIZ	1105	4	4	500	30	1350	1750	10

*For a pit 4 feet deep; with 36 in. diameter cover plate for 1½ in., 2 in. and 2½ in. pumps, and 42 in. diameter cover plate for 3 in. and 4 in. pumps.
See page 7 for different sizes of cover plates and maximum allowable depth of pit.
Add Code Word JCESF for Brass Impeller.
Add Code Word JCGMR for Monel Metal Shaft.

Buffalo Standard Sump Pump Bearings and Impeller

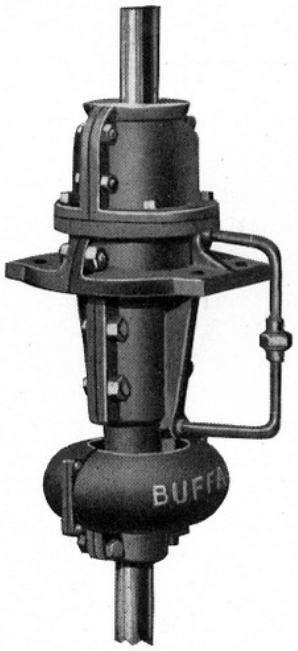


Fig. 1031
Vertical Shaft Thrust Bearing

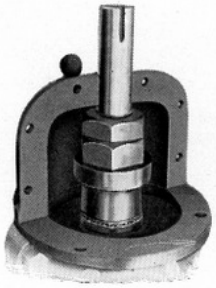


Fig. 1008
Showing Interior Bearing Housing and Nuts for Adjusting Exactly the Vertical Position of the Shaft

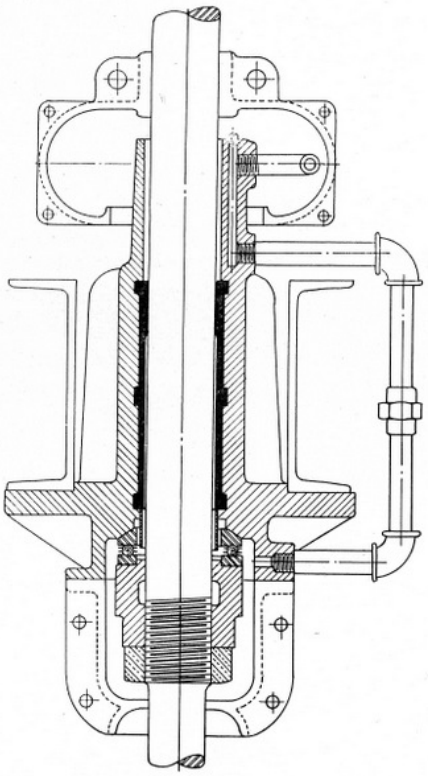


Fig. 1032
Vertical Shaft Thrust Bearing —Sectional View

Buffalo Thrust Bearings:—In the Buffalo Thurst Bearing, the weight of rotating parts is carried on ball bearings. Hardened and ground steel balls in a brass cage container run on ball races of hardened steel, perfectly ground to exact contour. The lower ball race rests on a spherical seat in the upper portion of the bearing housing, thus permitting the ball-bearing to adjust itself perfectly to the alignment of the parts, and placing an equal weight on all of the balls. Fig. 1008 shows an interior view of the splash chamber, which forms a protective housing around the upper portion of the thrust bearing. Adjusting nut and check nut are provided, so that exact adjustment of the vertical position of the impeller and moving parts within the pump casing may be made.

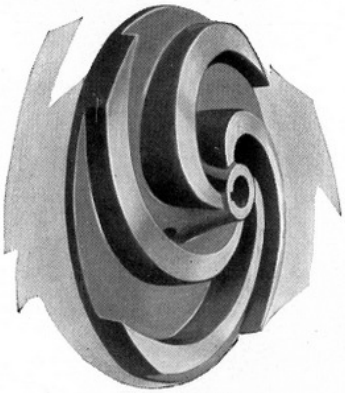


Fig. 1202

Intermediate Guide Bearings.—When designed for use in very deep pits, shaft requires additional support between pump and cover plate. In such cases, we supply an intermediate bearing supported in the pipe surrounding shaft, this bearing being lubricated from sight feed oil cup placed above cover plate.

The Impeller used in Buffalo Sump Pumps is of the special open side type shown in Fig. 1202. This Impeller operates with close clearance against a machine side plate. With this Impeller construction, the pump is not liable to become clogged with mud, dirt, chips, etc., although it is always advisable to furnish a screen over the suction opening.

Buffalo Automatic Baby Sump Pumps

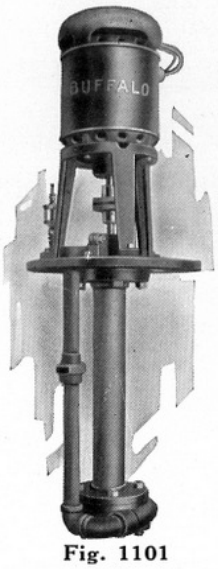


Fig. 1101

Pump: Buffalo Vertical Single Suction Class "O". Good for 100 ft. pressure.

Casing and Suction Side Plate: Cast iron, machined to gauge, drilled to template. Close clearances with impeller, preventing leakage.

Impeller: Cast iron, single suction, open type. Fig. 1202.

Shaft: Steel. Cannot be brass covered. Monel metal can be furnished on special order. Enclosed in pipe which extends from pump to cover plate.

Thrust Bearing: Vertical ball bearing type, lubricated from sight feed oil cup.

Coupling: Flexible type.

Sump Pit: Not furnished.

Float: Copper ball float.

Stuffing Box and Gland: In cover plate, around shaft to prevent any steam, gases or odors escaping into room.

Discharge Pipe: Furnished up to cover plate.

Cover Plate: Cast iron. See page 7.

Motor Tripod: Cast iron, about 10 in. high.

Float Switch: Automatic. To suit electric current.

Finish: All outfits painted, filled and rubbed down. Bright parts exposed to weather protected by slushing compound.

Code Word, Regular Fitted, Without any Electrical Equipment, or Pit.*	Figure Number	Size of Pump, Inches	Size of Discharge, Inches	Capacity, Gallons Per Minute	Total Head, Feet	Speed Limits, Revolutions Per Minute		Size of Motor, Horse Power
						Minimum	Maximum	
MRWPZ	1101	1	1	25	10	1200	1800	½
MRWQA	1101	1	1	25	15	1420	1800	¾
MRWQL	1101	1	1	25	20	1620	1800	¾
MRWQX	1101	1	1	25	25	1750	1800	¾
MRWRX	1101	1½	1½	60	10	850	1450	1
MRWSA	1101	1½	1½	60	15	980	1800	1½
MRWSM	1101	1½	1½	60	20	1120	1800	1½
MRWSQ	1101	1½	1½	60	25	1250	1800	1½
MRWSX	1101	1½	1½	60	30	1400	1800	2

*For a pit 4 feet deep, with 28 in. diameter cover plate. See page 7 for maximum allowable depth of pit.
Add Code Word JCESF for Brass Impeller.
Add Code Word JCGMR for Monel Metal Shaft.

Buffalo Automatic Sump Pumps

Standard Sump Pump

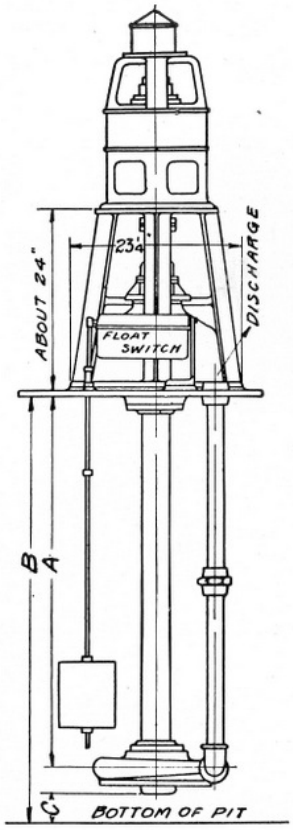


Fig. 1071
Line Drawing—
Standard Sump Pump

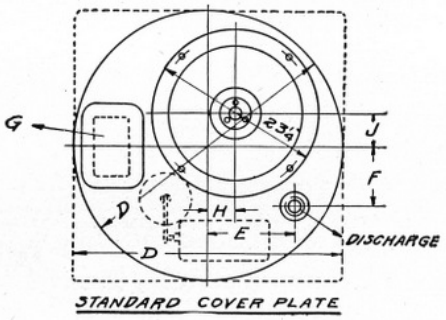


Fig. 1072
Cover Plate—
Standard Sump Pump

Standard cover plates are 36 in., 42 in. and 48 in. round or square, except 42 in. is smallest that can be used with 3 in. and 4 in. pumps.

Handhole is provided in 42 in. square and 48 in. round or square cover plates. 3 in. tapped hole with pipe plug is provided in smaller sizes.

A 15 in. circular manhole can be furnished in 48 in. cover plates at extra charge.

All outfits are designed for a pit 4 feet deep, but at extra charge can be built for pits as deep as 12 to 14 feet.

2 ft. 6 in. is minimum depth of pit which will allow automatic operation of float switch.

With 3 in. and smaller deeper sump pumps cover plate is 64 in. diam. With 4 in. duplex sump pump, cover plate is 72 in. diam.

Baby Sump Pump

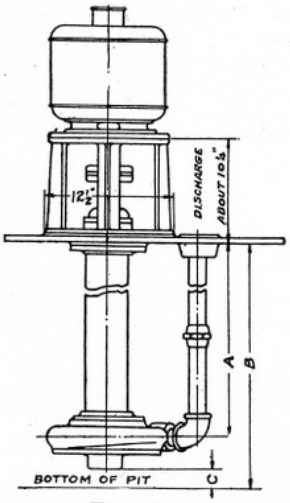


Fig. 1073
Line Drawing—
Baby Sump Pump

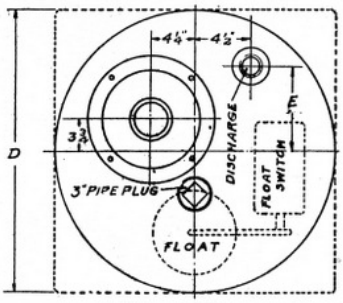


Fig. 1074
Cover Plate—Baby Sump Pump

28 in. round or square cover plate is standard, but other sizes can be furnished on special order.

3 in. tapped hole with pipe plug is provided.

All outfits are designed for a pit 4 feet deep, but at an extra charge the 1½ in. pump can be built for pits as deep as 6 feet.

2 ft. 1 in. is minimum depth of pit which will allow automatic operation of float switch.

The "BUFFALO" line includes

STEAM PUMPS
VACUUM PUMPS
CONDENSERS
POWER PUMPS
CENTRIFUGAL PUMPS

"BUFFALO" pumps are used extensively for

Acid Plants
Bilge and Drainage
Boiler Feeding
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Heating Systems
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